

An Ayurvedic perspective of Mutrashmari - Urinary Calculi along with Crystal Morphology

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Background: Microscopic evidence based Urinary Crystal Morphology would help Ayurveda physicians to give appropriate Ayurvedic treatment to Mutrashmari patients. Urinary calculi affected 22.1 million people in 2015 with 16,100 deaths worldwide.

Aim: To study the correlation of Urinary calculi with Mutrashmari along with Crystal Morphology.

Objective: To observe the correlation of Urinary calculi with Mutrashmari along with Crystal Morphology.

Material and Methods: It includes Literature Review, Initial assessment & enrollment of patients, Microscopic observational changes to correlate Urinary Calculi with Mutrashmari, Observation & Interpretation.

Results: It shows the correlation of Urinary Calculi with Mutrashmari along with Crystal Morphology.

Conclusion: This study finds the correlation of Urinary Calculi with Mutrashmari along with Crystal Morphology. This study would help Ayurveda physicians to give appropriate Ayurvedic treatment to Urinary Calculi patients on the basis of evidence based Crystal Morphology.

Keywords: Lakshana, Samprapti, Mutrashmari, Calculi

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Note



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Introduction

Kidney stone disease is a crystallopathy and occurs when there are too many minerals in the urine and not enough liquid or hydration. This imbalance causes tiny pieces of crystal to aggregate and form hard masses or calculi in upper urinary tract.

Because renal calculi typically form in the kidney, if small enough, they are able to leave the urinary tract via urine stream. A small calculus may pass without causing symptoms.

However, if stone grows to more than 5mm it can cause blockage of ureter resulting in excruciating intermittent pain that radiates from the flank to the groin or to the inner thigh. This is due to transfer of referred pain signals from lower thoracic splanchnic nerves to lumbar splanchnic nerves as stone passes down from kidney or proximal ureter to distal ureter.

Between 1% and 15% of people globally are affected by renal calculi at some point in the liver. In 2015, 22.1 million cases occurred resulting in about 16,100 deaths. They have become more common in western world since the 1970's. Generally more men are affected than women.

The prevalence and incidence of the disease rises worldwide and continues to be challenging for patients, physicians and healthcare systems. Renal colic caused by kidney stones is commonly accompanied by urine urgency, restlessness, haematuria, sweating, nausea and vomiting.

It typically comes in waves lasting 20 to 60 min caused by peristaltic contraction of ureter as it attempts to expel stone. Risk factors include dehydration from low fluid intake, warm climate, obesity, immobility, sedentary lifestyle, high dietary intake of animal protein, sodium, sugar including honey, refined sugar, high fructose, corn syrup, excessive consumption of fruit juices etc.

According to *Ayurveda* *Mutrashmari* is तुल्यताश्मणा यांती तस्मात्ताश्मरि विदुः I

In *Ayurveda* there are 4 types of *Mutrashmari* explained i.e., *Vataj*, *Pittaj*, *Kaphaj* & *Shukraj*.

According to *Sushruta Hetus* of *Mutrashmari* include *Divaswaap*, *Samashan*, *Adhyashan*, *Shita*, *Snigdha*, *Guru*, *Madhur Aahaar Sevan*.

According to *Madhav Nidan Lakshana* includes *Mutrakruchrataa*, *Jwar*, *Aruchi*, *Ashmatulya Vedana*, *Mutra Rujaa*, *Basti Shool*, *Vishirnadhaaryukta Mutra*, *Medhra Pradeshi Vedana*, *Mutra Margaavarodh*, *Sarakta Mutrapravrutti*, *Bastidaha*, *Bastitod Shaitya* and *Gurutva*, *Vrushan Shotha*.

According to *Charak Samprapti* of *Mutrashmari* is described as:

विशोषयदबास्तीगतं सशुक्रम् मूत्रम् स पित्तम् पवनः कफम् वा I
यदा तदाष्मन्यूपजायते तु क्रमेण पित्तेष्विव रोचना गोः II
(च.चि.२६/३६)

Material and Methods

Initial assessment & Enrollment with written consent

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Microscopic observational changes to correlate Urinary Calculi with *Mutrashmari*

↓

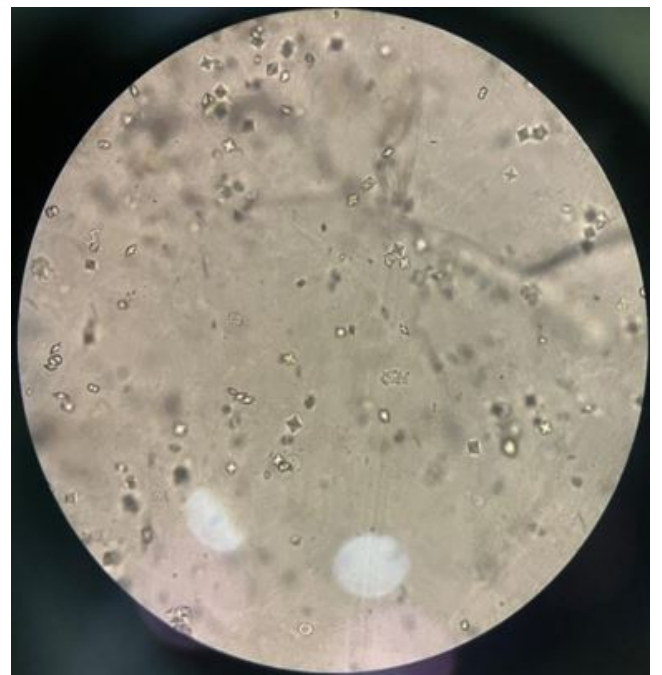
Assessment criteria along with Crystal Morphology

↓

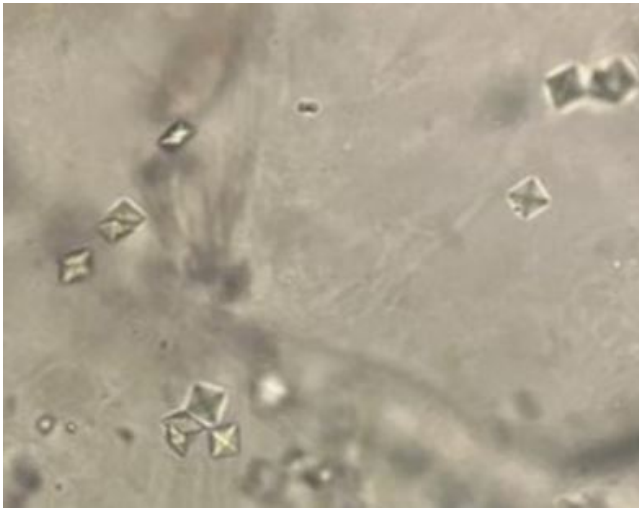
Observation, Interpretation & Statical Analysis

Total 5 number of patients are enrolled in this study and correlated with Urinary Calculi i.e., *Mutrashmari* along with Crystal Morphology.

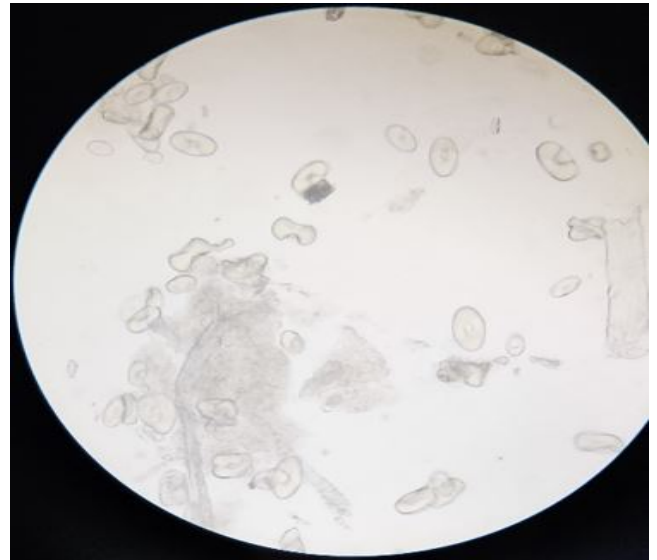
Microscopic observational changes to correlate Urinary Calculi with *Mutrashmari* along with Crystal Morphology as follows :-



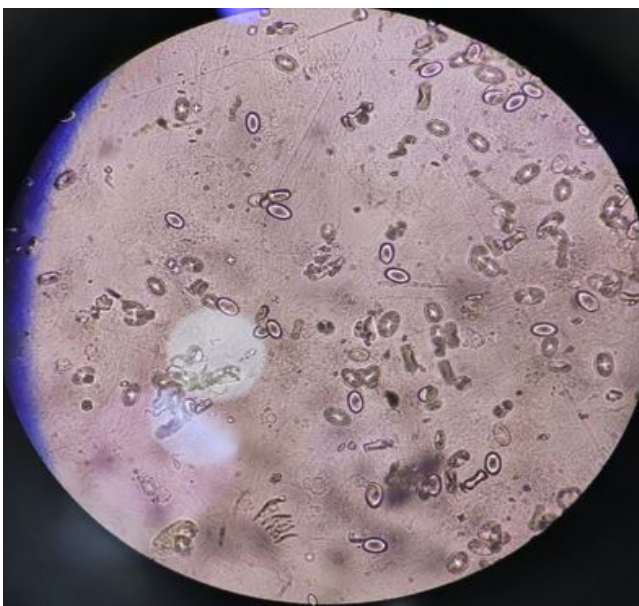
Calcium Oxalate Crystals



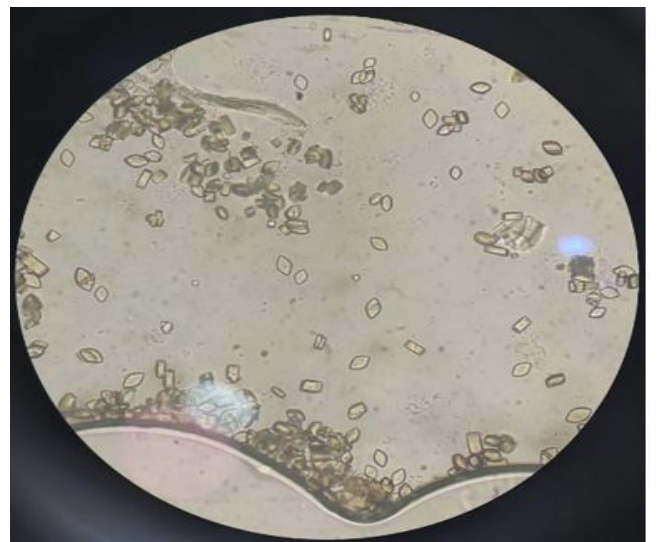
Focused Calcium Oxalate Crystals



Calcium Oxalate & Carbonate Crystals



Calcium Oxalate Mature & Immature forms



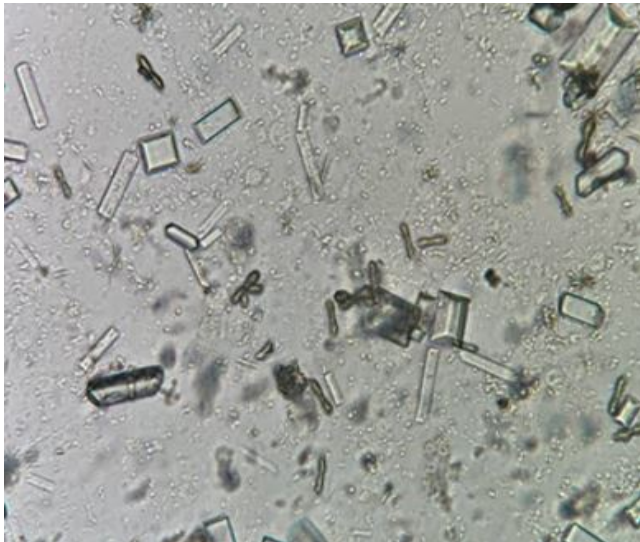
Uric Acid Crystals



Calcium Carbonate Crystals



Focused Uric Acid Crystals



Triple Phosphate Crystals



Tyrosine Needles



Tyrosine Needles

Observations

It is observed that *Mutrashmari* can be correlated with Urinary Calculi along with Crystal Morphology with the help of Patient's Data as follows:

Total 5 number of patients are enrolled and all of them shows various crystal morphologies shown above.

Results

This study shows the correlation of Urinary Crystals with *Mutrashmari* along with Crystal Morphology.

Conclusion

This study finds correlation of Urinary Crystal with *Mutrashmari* along with Crystal Morphology. This study would help *Ayurveda* physicians to give appro. *Ayurvedic* treatment to Urinary Calculi patients on basis of evidence based Crystal Morphology.

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